National Institute of Environmental Health Sciences

Socioeconomic indicators of heat-related health risk supplemented with remotely sensed data

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Abstract:

BACKGROUND: Extreme heat events are the number one cause of weather-related fatalities in the United States. The current system of alert for extreme heat events does not take into account intra-urban spatial variation in risk. The purpose of this study is to evaluate a potential method to improve spatial delineation of risk from extreme heat events in urban environments by integrating sociodemographic risk factors with estimates of land surface temperature derived from thermal remote sensing data. RESULTS: Comparison of logistic regression models indicates that supplementing known sociodemographic risk factors with remote sensing estimates of land surface temperature improves the delineation of intra-urban variations in risk from extreme heat events. CONCLUSION: Thermal remote sensing data can be utilized to improve understanding of intra-urban variations in risk from extreme heat. The refinement of current risk assessment systems could increase the likelihood of survival during extreme heat events and assist emergency personnel in the delivery of vital resources during such disasters.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2770546

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children, Elderly, Low Socioeconomic Status, Racial/Ethnic Subgroup

Other Racial/Ethnic Subgroup: Hispanic; African-American; Asian; Native American

Resource Type: ☑

format or standard characteristic of resource

Research Article

Resilience: ☑

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content